

**TO: HOLDERS OF COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED
PARTS LIST FOR:**

**804044 SERIES
CYLINDER & VALVE ASSEMBLY**

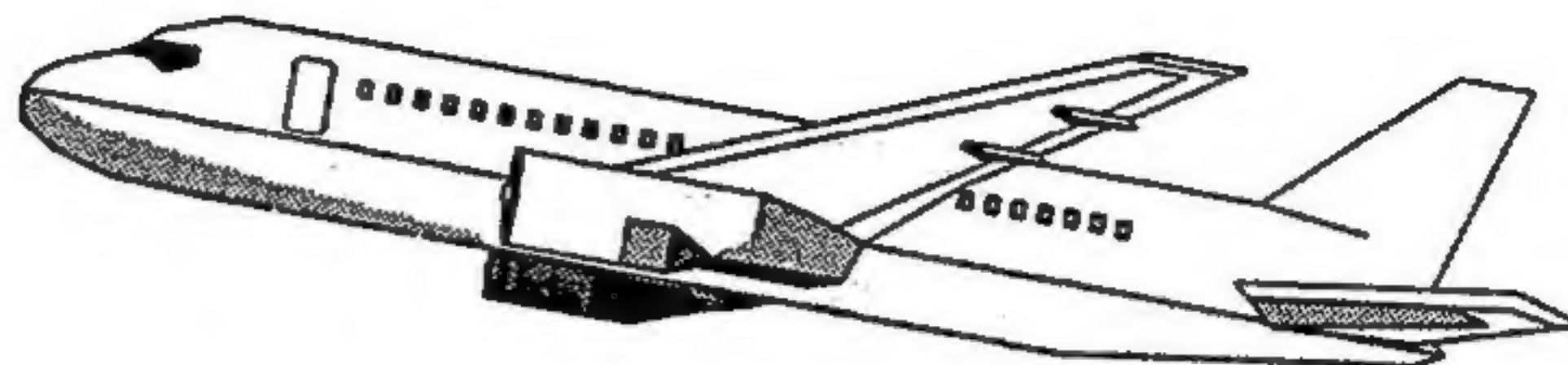
REVISION NO. 3 DATED AUGUST 10, 1998

HIGHLIGHTS

Page No.	Description of Change	Effectivity
All	Changed all page dates.	All Models
RR-1/2	Added revision number and date	All Models
LEP-1, LEP-2	Changed effectivity dates for all pages	All Models
INTRO-2	Revised paragraph 3. was: A Figgie International Company is: A Scott Technologies Company	All Models
501	Revised paragraph 1. was: <u>NOTE</u> : Do not examine o-rings, ... is: <u>NOTE</u> : Do not examine boss seal, o-rings, ...	All Models
601/602	Revised paragraph 2.E. was: Replacement of any gasket, ... is: Replacement of any boss seal, gasket, ...	All Models
708	Revised paragraph 7.A. was: ... Install the boss seal ... is: ... Install new boss seal ...	All Models

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HIGHLIGHTS
Revision No. 3
Page -1
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COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

FOR:

804044 SERIES CYLINDER & VALVE ASSEMBLY

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COMPONENT MAINTENANCE MANUAL
WITH ILLUSTRATED PARTS LIST
804044 SERIES
INTRODUCTION

1. Scope

This manual establishes the user maintenance, overhaul and service procedures for servicing the 804044 Series Cylinder & Regulator Assemblies described herein. Dash configurations of the 804044 Series Cylinder & Regulator Assemblies that are covered by this CMM are indicated below.

804044-77
804044-15

This manual provides the following information:

- A. Specifies proper safety regulations to be followed while performing service on oxygen equipment used in aviation applications.
- B. Establishes the proper sequence of operations to be performed on the defined equipment.
- C. Provides the user with data necessary to properly maintain, check, test and repair the equipment.

2. WARNINGS

The following WARNINGS are presented to inform the user of this manual of the requirements which shall be adhered to when performing service procedures on this equipment. Additional WARNINGS will be found in the procedural steps in the manual.

WARNING: ANY SERVICE OR OVERHAUL PERFORMED ON THIS APPARATUS SHALL BE DONE ONLY BY THOSE FACILITIES EXPERIENCED IN, OR BY PERSONNEL KNOWLEDGEABLE IN, AVIATION OXYGEN EQUIPMENT. IF NONE ARE KNOWN, CONTACT SCOTT AVIATION OR ITS DISTRIBUTORS FOR NAMES OF AUTHORIZED SERVICE CENTERS.

ALL PROCEDURES DESCRIBED IN THIS MANUAL SHALL BE PERFORMED IN AN AREA FREE OF OIL, GREASE, FLAMMABLE SOLVENTS OR OTHER COMBUSTIBLE MATERIALS. DUST, LINT, AND FINE METAL FILINGS ARE ALSO POTENTIAL COMBUSTIBLES THAT MIGHT IGNITE AND RESULT IN AN EXPLOSION WHEN EXPOSED TO PRESSURIZED OXYGEN.

DO NOT ALLOW OIL, GREASE, FLAMMABLE SOLVENTS, OR OTHER COMBUSTIBLE MATERIALS TO COME IN CONTACT WITH PARTS THAT WILL BE EXPOSED TO PRESSURIZED OXYGEN. DUST, LINT, AND FINE METAL FILINGS ARE ALSO POTENTIAL COMBUSTIBLES THAT MIGHT IGNITE AND RESULT IN AN EXPLOSION WHEN EXPOSED TO PRESSURIZED OXYGEN.

3. Product Support Services

Product support services for the equipment covered by this document is provided by Scott Aviation. The services include repair and overhaul, replacement parts, and technical documentation.

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4. Verification

Verification of data presented in this document was performed on October 13, 1994.

DESCRIPTION AND OPERATION

1. General

This section describes the equipment that comprises the 804044 Series Cylinder and Valve Assemblies. Information regarding part numbers, operation and installation is also presented in this section.

2. Description

The 804044 Series Cylinder and Valve Assemblies are self-contained, unregulated, high-pressure oxygen sources that supply aviation grade oxygen (per Military Specification MIL-PRF-27210, Type I) to crew members and/or passengers.

Each assembly consists of a composite material cylinder on which a manually operated ON/OFF valve is installed. One, or more, units may be installed to supply the oxygen distribution system of an aircraft. The number and size of cylinders selected will be determined by the oxygen volume requirements of the specific aircraft.

3. Part Number Identification

The part number for each cylinder and valve assembly is an eight digit number as shown below. The first six digits (804044) indicate the Series to which the cylinder and valve assembly belongs. The seventh and eighth digits indicate the size of cylinder supplied with the unit (see Table 1).

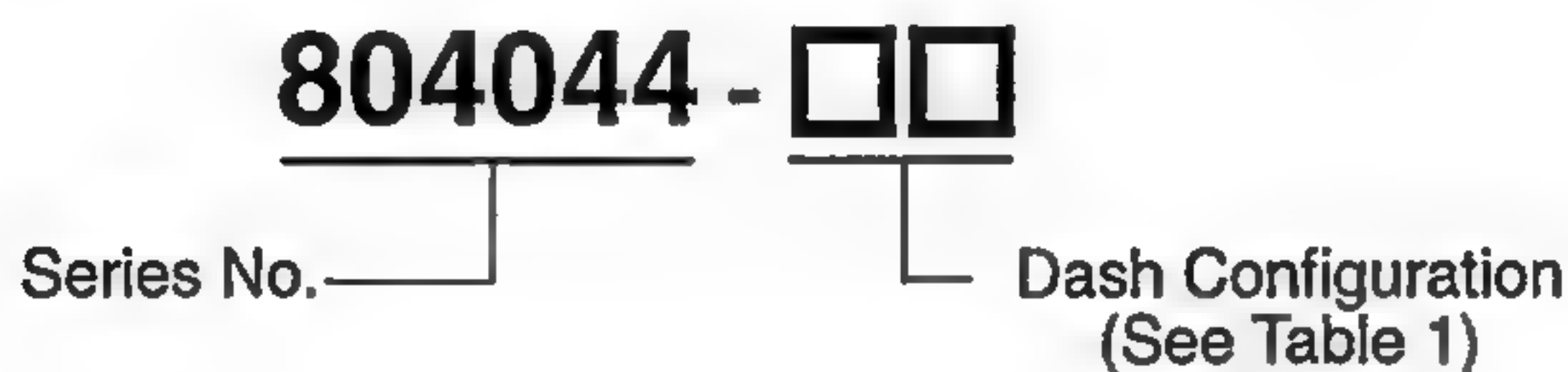
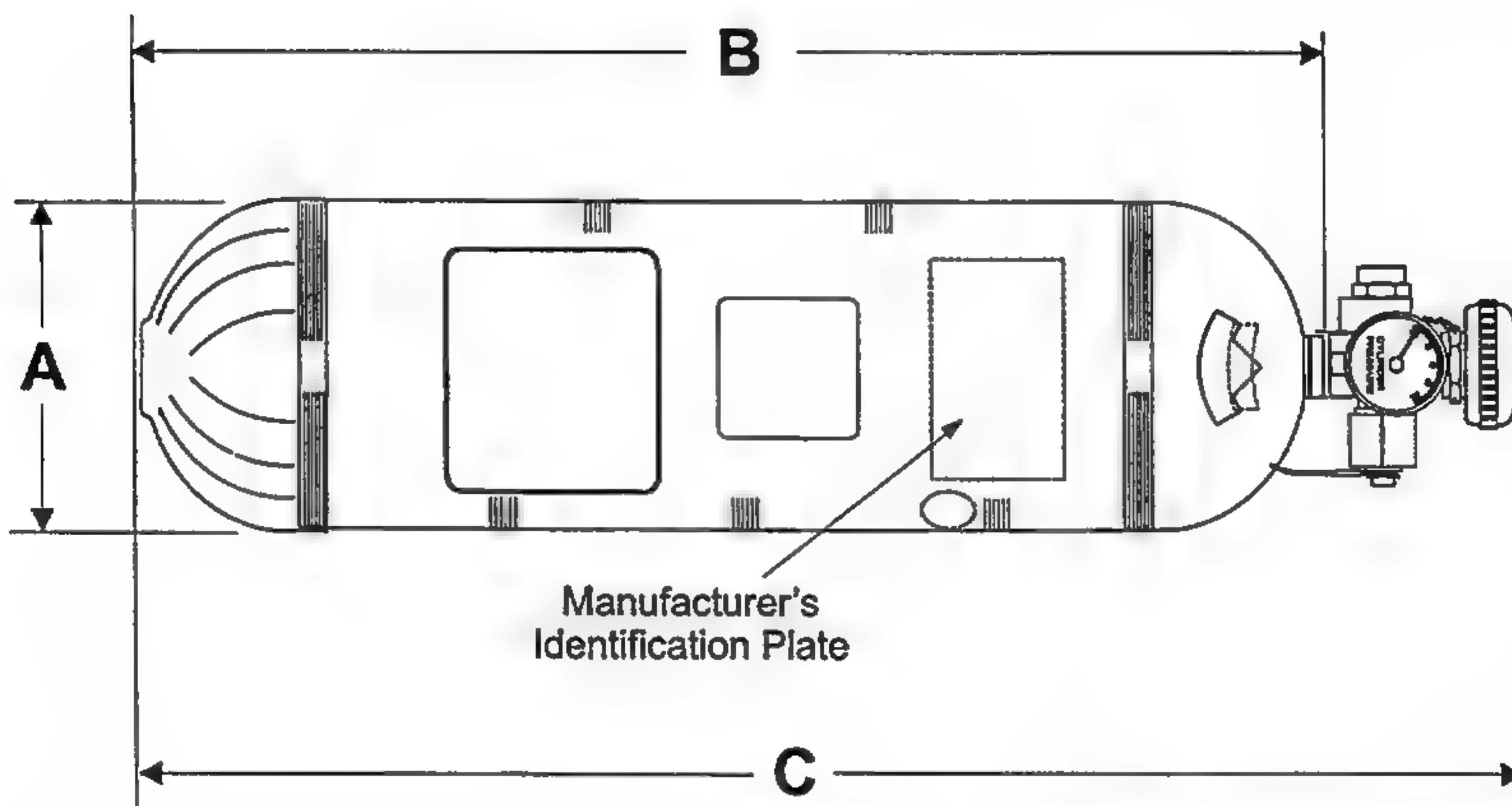


Table 1
Cylinder & Valve Assembly Data

DASH CONFIG.	CAPACITY cu. ft. (liters)	CYLINDER PART NO.	DIMENSION inches (cm)			EMPTY WT. lb (kg)		CHARGED WT. (Note 1) lb (kg)
			A ±0.10 (±0.25)	B ±0.25 (±0.64)	C (MAX)	MIN	MAX	MAX
-77	77.1 (2183)	21507-03	7.5 (19.1)	29.4 (74.7)	33.8 (85.9)	11.4 (5.2)	12.9 (5.8)	21.5 (9.7)
-15	115.7 (3275)	21507-04	9.0 (22.9)	31.3 (79.8)	35.8 (90.9)	16.1 (7.3)	18.1 (8.2)	30.1 (13.6)

Note 1: Weights shown include weight of Valve Assembly, P/N 804216-01.



4. Operation

The valve assembly (see Figure 1) used with the 804044 Series Cylinder and Valve Assembly is a manually operated, slow opening valve assembly. Opening the valve allows high pressure (1850 psi / 12.76 MPa) oxygen, from the cylinder, to flow from the outlet port of the valve. Closing the valve retains the pressurized oxygen in the cylinder and lower portion of the valve body. The valve assembly is equipped with a pressure gauge to indicate oxygen pressure remaining in the cylinder.

The valve assembly is a simple ON and OFF type valve and is not intended for regulating oxygen flow. During normal operation, the valve should be in only one of two positions (fully-opened or fully-closed). The mechanics of operation for this valve are described below.

A valve handle (1) is attached to the upper end of the stem and poppet assembly (2). Counterclockwise rotation of the valve handle lifts the stem and poppet assembly to open the orifice in seat (6). High pressure oxygen from the cylinder enters the valve assembly through inlet tube (4). Incoming oxygen is filtered twice before exiting the valve for distribution throughout the aircraft. The oxygen first passes through the inlet filter (5) and then through the outlet filter (7). Clockwise rotation of the valve handle (1) lowers the tip and poppet assembly to block the flow of oxygen from the cylinder. A pressure cap assembly (8) prevents accidental seepage of oxygen when the valve assembly is in the closed position.

A burst disc assembly (3) is installed in the valve body, and is exposed to cylinder pressure. The burst disc will rupture should the unit become over pressurized (2500-2750 psi / 17.24 - 18.96 MPa).

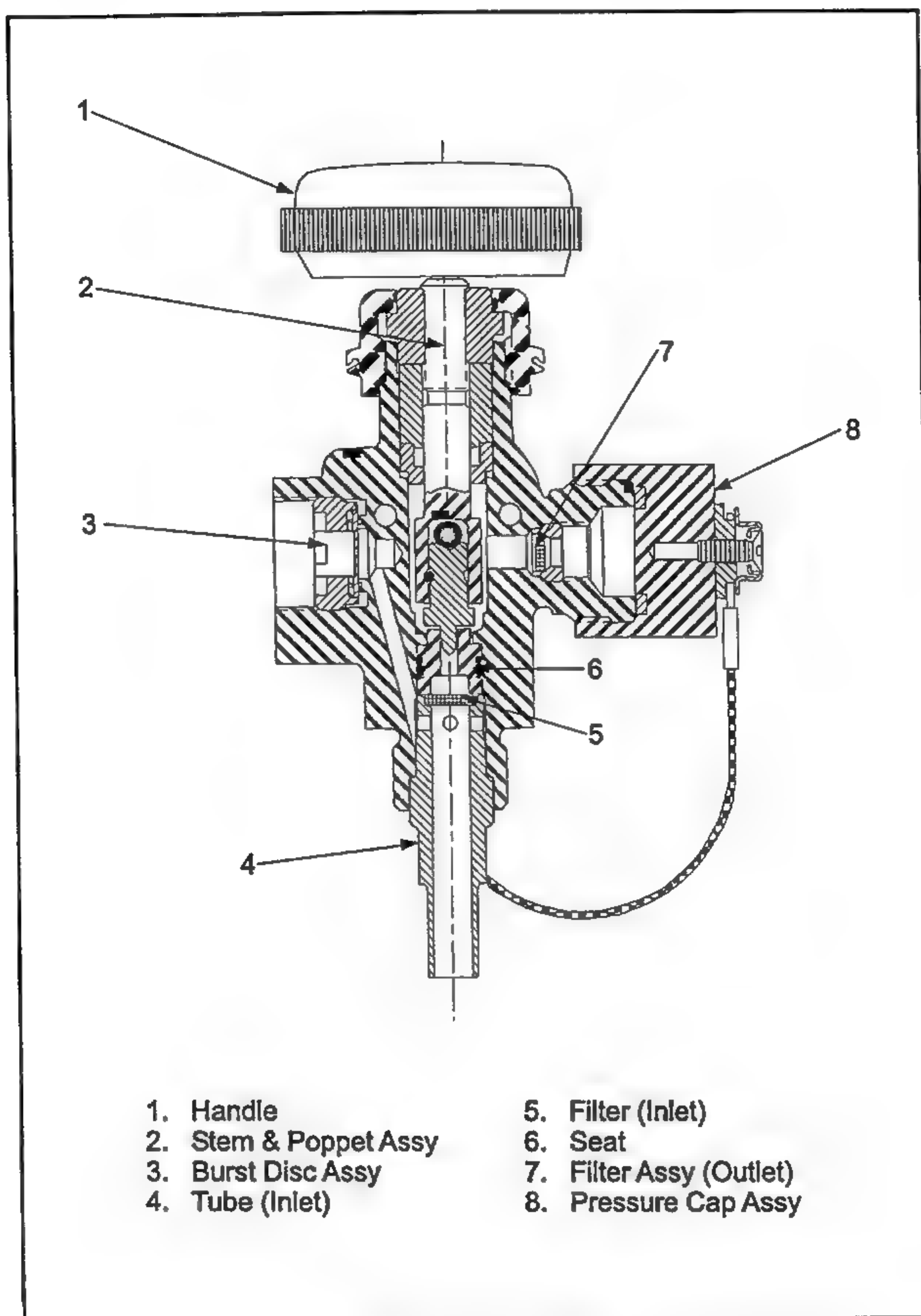
Approximately six rotations of the valve handle in a counterclockwise direction are required to completely open the valve. The initial flow of oxygen is small but increases as the tip and poppet assembly is raised to enlarge the seat orifice. The slowly increasing volume of oxygen that is output from the valve prevents the downstream system from pressurizing too quickly and overheating.

Proper operation will extend the service life of a valve and minimize the need for repairs.

Open and close the valve as indicated below.

OPEN - Turn valve handle (1) in a counterclockwise direction to full open position (approximately six turns); turn valve handle approximately 1/4 turn clockwise. Forcing the valve handle beyond the full open position will not increase the flow of oxygen, and may damage seals and/or packings within the valve body.

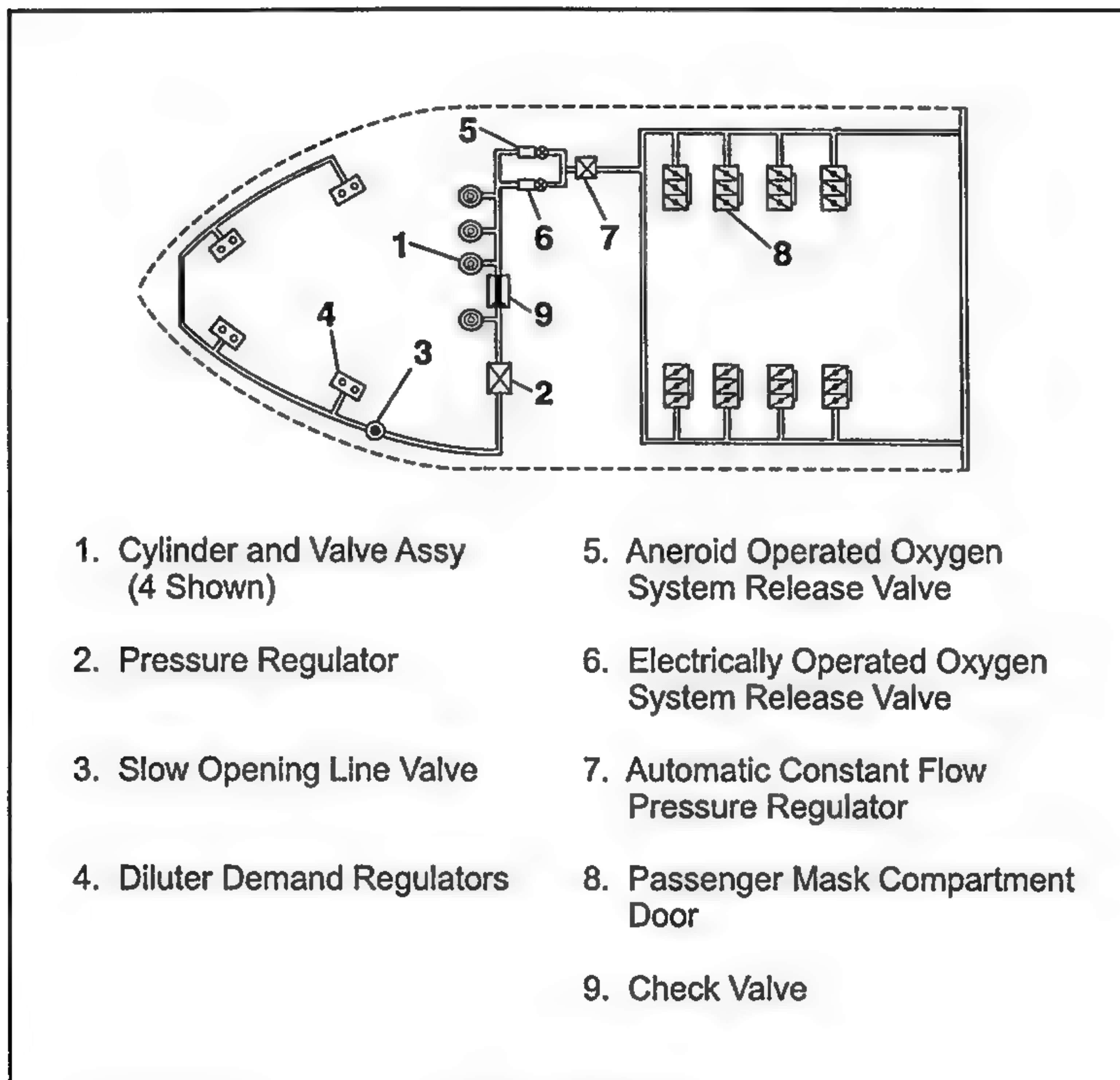
CLOSE - Turn valve handle (1) to a full clockwise position to stop oxygen flow.



Valve Assembly
Figure 1

5. Installation

A typical installation of 804044 Series Cylinder and Valve Assemblies is presented in Figure 2.



**Typical Installation
Figure 2**

TESTING AND FAULT ISOLATION

1. General

This section contains the testing and fault isolation procedures used to evaluate performance of the 804044 Series Cylinder and Valve Assemblies. Should a failure occur during testing procedures, refer to the troubleshooting table (Table 103) for fault isolation and suggestions to remedy the problem.

2. Test Equipment

Test equipment required to evaluate performance of valve assemblies, described by IPL Figure 2, is presented in Table 101.

Table 101: Test Equipment

NOMENCLATURE	PART NO. (Vendor Code)	MANUFACTURER
Flowmeter - (200-2000 LPM)	1110CM41CBGAA (V91556)	Brooks Instruments Statesboro, GA 30458
Flowmeter - (10-100 cc/min)	1355EC1HJAW1A (V91556)	
Pressure Gauge (0-2000 PSI)	132267 (1403 Series) (V61349)	Ametek (U.S. Gauge) Sellersville, PA 18960
Valve - Flow Control	B18VF8 (V12623)	Whitey Co. Highland Heights, OH 44143
NOTE: Equivalent test equipment may be substituted.		

3. Test Materials

A list of consumable test materials is presented in Table 102. Equivalent materials may be substituted.

Table 102: Consumable Test Materials

MATERIAL (Code)	DESCRIPTION	MANUFACTURER
Oxygen	MIL-PRF-27210, Type I	Local Vendor
Rust Inhibiting Leak Test Solution (V72658)	Sodium Chromate; 5cc per gallon of water	Allied Signal Corp. Morristown, NJ

4. Test Sequence

Unless otherwise specified, functional testing of the Cylinder and Valve Assemblies shall be performed in the order in which they are presented within this document.

5. Cylinder Testing

Current DOT Standards require hydrostatic testing of cylinders every three years. If required, subject cylinders to hydrostatic testing in accordance with CGA Pamphlets C-1 and C-6.2, and the Hazardous Materials Regulations of Department of Transportation (DOT), Current Tariff No.

NOTE: Facilities performing hydrostatic cylinder tests shall hold a current and valid DOT approval.

According to current DOT Standards, the service life for composite cylinders is limited to 15 years maximum.

6. Test Procedures

WARNING: IN ALL PROCEDURES LISTED BELOW, OXYGEN IS SPECIFIED AS THE TEST GAS. WATER PUMPED NITROGEN OR OIL-FREE AIR MAY BE SUBSTITUTED, BUT TEST RESULTS MUST BE CONVERTED PRIOR TO BEING COMPARED WITH TEST RESULTS SPECIFIED FOR OXYGEN. DO NOT, UNDER ANY CIRCUMSTANCES, USE OIL PUMPED GAS AS THIS WILL CAUSE CONTAMINATION OF THE VALVE AND TEST EQUIPMENT. OIL, EVEN IN MINUTE QUANTITY, COMING IN CONTACT WITH OXYGEN MAY CAUSE AN EXPLOSION OR FIRE.

6. Test Procedures - (Continued)

A. Evaluate internal valve leakage as follows:

- (1) Close valve by rotating handle (10, IPL Figure 2) in a clockwise direction. Using a torque wrench, close valve to a torque of 60 ± 5 inch pounds (6.8 ± 0.57 Nm).
- (2) Open valve by rotating handle in a counterclockwise direction. Using a torque wrench, close valve to a torque of 30 inch pounds (3.4 Nm) maximum.
- (3) Attach flowmeter (10-100 cc/min) to valve outlet.
- (4) Apply pressurized oxygen (1850 +0/-50 psi / 12.76 +0/-0.34 MPa) to valve; monitor flow meter. Leakage shall not exceed 50 cc/minute.
- (5) Discontinue flow of pressurized oxygen to valve.

B. Check torque required to open/close pressurized valve.

- (1) Install pressure cap assembly (100) or other suitable cap on external threads of valve body (210) outlet port.
- (2) Close valve by rotating handle (10) to full clockwise position.
- (3) Connect oxygen supply to inlet of valve body (210).
- (4) Apply pressurized oxygen (1850 +0/-50 psi / 12.76 +0/-0.34 MPa) to valve.
- (5) Using a torque wrench, fully open valve. Torque required to open the valve shall not exceed 30 inch pounds (3.4 Nm).
- (6) Using a torque wrench, fully close valve. Torque required to close the valve shall not exceed 30 inch pounds (3.4 Nm).
- (7) Repeat Steps (5) and (6) two times to verify torque values are not exceeded.

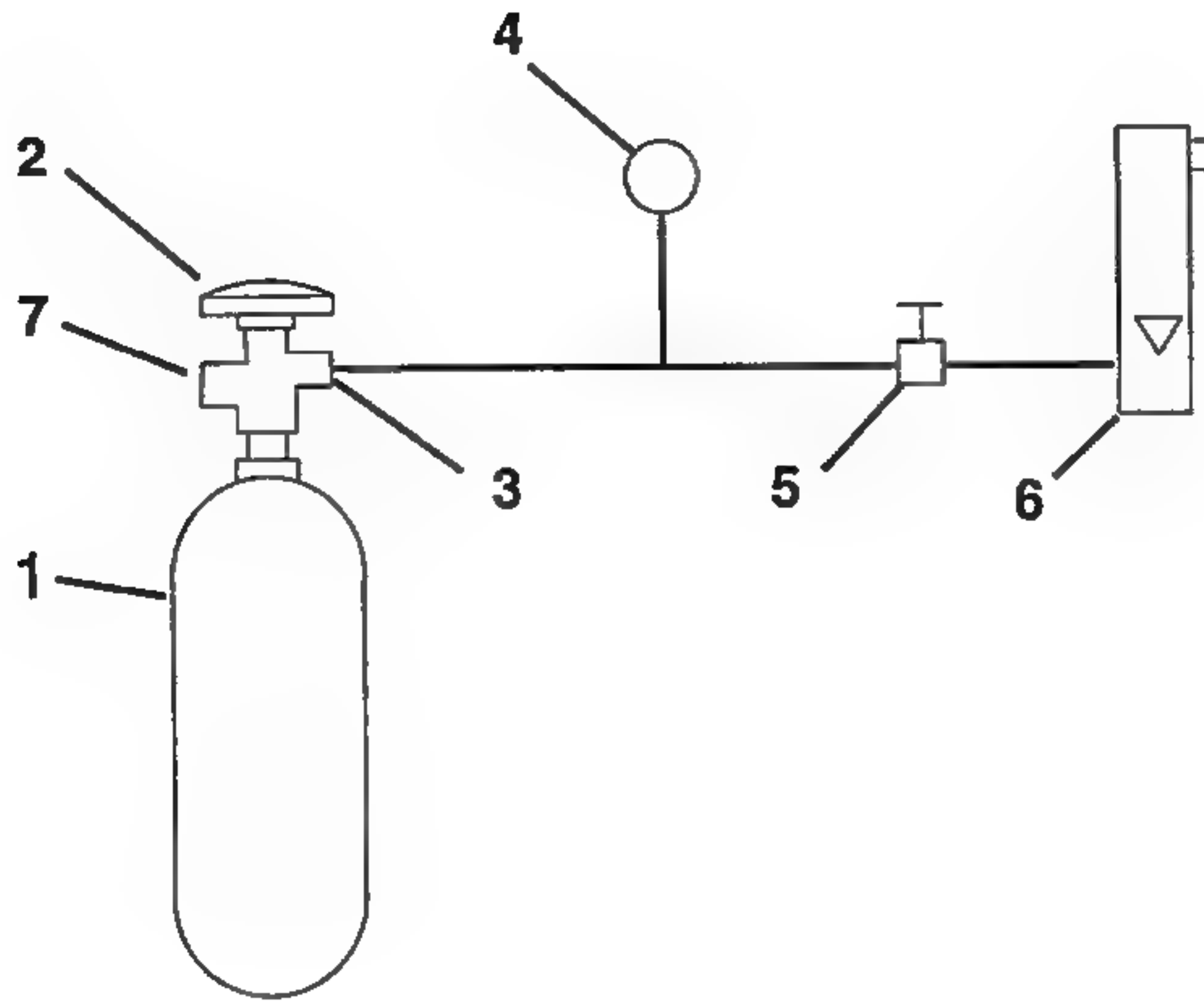
6. Test Procedures - (Continued)

C. Evaluate external valve leakage as follows:

- (1) Install pressure cap assembly (100, IPL Figure 2) or other suitable cap on external threads of valve body (210) outlet port.
- (2) Open valve by rotating handle (10), three full revolutions, in a counterclockwise direction.
- (3) Connect oxygen supply to inlet of valve body (210).
- (4) Submerge valve assembly in leak test solution and apply pressurized oxygen (1850 +0/-50 psi / 12.76 +0/-0.34 MPa) to valve.
- (5) Observe the valve for a period of two minutes. If leakage is apparent, actual leakage shall be determined. Leakage not exceeding 5 cc/hour (0.083 cc/min) shall be considered acceptable.
- (6) Cycle valve (from open to closed to fully open) twice; repeat step (5) with valve fully open. If leakage is apparent, actual leakage shall be determined. Only if leakage does not exceed 5 cc/hour (0.083 cc/min) shall the valve be considered acceptable.
- (7) Discontinue supply of pressurized oxygen to valve assembly.
- (8) Remove pressure cap assembly (100) or other cap from the valve body (210) outlet.

D. Perform flow test as follows:

- (1) Install test valve as show in Figure 101.
- (2) Open valve (2) by rotating valve handle to full counterclockwise position.
- (3) Using flow control valve (5, Figure 101), adjust oxygen flow to obtain rate of 1000 LPM (NTPD) at an inlet pressure of 1250 +0 / -50 psi (8.62 +0 / -0.34 MPa); verify flow rate on flowmeter (6).
- (4) Monitor piezometer mounted gauge. Pressure drop through valve shall not exceed 200 psi (1.38 MPa).



- | | |
|---|-----------------------------|
| 1. OXYGEN SOURCE -
FLOW TEST (1250 ± 50 PSIG / 8.62 ± 0.34 MPa)
GAUGE ACCURACY TEST (1850 ± 50 PSIG / 12.76 ± 0.34 MPa) | 5. FLOW CONTROL VALVE |
| 2. 804216-01 OXYGEN CYLINDER VALVE | 6. FLOWMETER (200-2000 LPM) |
| 3. OUTLET PORT | 7. SAFETY OUTLET PORT |
| 4. PRESSURE GAUGE (0-2000 PSIG) | |

Figure 101 Flow Test Setup & Gauge Accuracy Test Setup

6. Test Procedures - (Continued)

E. Perform gauge accuracy test as follows:

- (1) Ensure Cylinder & Valve Assy (1, -1A, IPL Fig. 1) is fully charged (1850 ± 50 PSIG / 12.76 ± 0.34 MPa).
- (2) Install Cylinder & Valve Assy as shown in Figure 101.
- (3) Close flow control valve (5, Fig. 101).
- (4) Open valve (2, Fig. 101) by rotating the valve handle to the full clockwise position.
- (5) Observe indication on pressure gauge (4, Fig. 101). Indication on pressure gauge (35, IPL Fig. 2) must agree with indication on pressure gauge (4, Fig. 101) within ± 50 PSIG / 0.34 MPa.

Table 103: Troubleshooting Chart (Sheet 1 of 2)

TROUBLE	PROBABLE CAUSE	REMEDY
Incorrect indication on pressure gauge (35, IPL Figure 2)	Faulty pressure gauge	Replace pressure gauge
Leakage between valve body (210) and pressure gauge (35)	Loose pressure gauge	Torque screws (40, IPL Figure 2) per Table 801
	Faulty packing (55)	Replace packing
Leakage through safety outlet port	Faulty gasket (160)	Replace gasket
	Ruptured disc (165)	Replace disc
Leakage from valve outlet port exceeds 50 cc/min	Valve not closed	Rotate handle (10) to full clockwise position
	Faulty stem & poppet assembly (70)	Replace stem & poppet assembly
	Faulty seat (195)	Replace seat
Leakage between stem of stem and poppet assembly (70) and sleeve (80)	Faulty stem and poppet assembly (70)	Replace stem and poppet assembly
	Faulty reciprocating seal (90)	Replace reciprocating seal
Leakage between valve body (210) and retainer (65)	Loose retainer (65)	Torque per Table 801
	Faulty stem and poppet assembly (70)	Replace stem and poppet assembly
	Faulty washer (75)	Replace washer
	Damaged threads on retainer (65), or body (210)	Replace defective part
Leakage between valve assembly (5, IPL Figure 1) and neck of cylinder (15)	Loose valve assembly	Torque per Table 801
	Faulty boss seal (10, IPL Figure 1)	Replace boss seal
	Damaged threads on valve body (210, IPL Figure 2)	Replace valve body
	Damaged threads in neck of cylinder (15, IPL Figure 1)	Replace cylinder

Table 103: Troubleshooting Chart (Sheet 2 of 2)

TROUBLE	PROBABLE CAUSE	REMEDY
Leakage between valve body (210, IPL Figure 2) and pressure cap assembly (100) with valve in the OPEN position	Loose pressure cap assembly	Torque per Table 801
	Damaged nipple (145)	Replace nipple
	Damaged OUTLET port in valve body (210)	Replace valve body
Insufficient flow of oxygen through the valve assembly	Dirty inlet filter (190)	Replace filter
	Dirty outlet filter (150)	Replace filter

DISASSEMBLY**1. General**

This section describes the equipment and procedures necessary for disassembly of the 804044 Series Cylinder and Valve Assemblies. Most repair procedures do not require complete disassembly of the valves. Disassemble units only to level necessary, as determined in Testing and Fault Isolation, to access suspect components.

2. Special Tools and Equipment

A list of special tools and/or equipment required for disassembly of the 804044 Series Cylinder and Valve Assemblies is presented in Table 301. Equivalent tools and/or equipment may be substituted for the listed items.

Table 301: Special Tools and/or Equipment

PART NUMBER	PART NAME	APPLICATION
2786-S52-1	Driver	Used to remove burst disc assembly (155) from valve body (210)

3. Disassembly

WARNING: TOOLS USED FOR MAINTENANCE / SERVICE OF OXYGEN RELATED EQUIPMENT SHALL BE CLEAN AND FREE OF CONTAMINANTS.

ENSURE THAT CYLINDER (15/15A, IPL Figure 1) IS COMPLETELY DISCHARGED PRIOR TO REMOVING VALVE ASSEMBLY (5) FROM THE CYLINDER.

CAUTION: DO NOT APPLY WRENCH FORCE TO CYLINDER NECK. TO REMOVE VALVE ASSEMBLY FROM CYLINDER NECK, HOLD THE CYLINDER IN A SUITABLE PADDED DEVICE IN SUCH A MANNER AS TO NOT DAMAGE THE FILAMENT OVERWRAP.

3. Disassembly (Continued)

- A. Remove valve assembly (5, IPL Figure 1) from cylinder (15/15A); remove and discard boss seal (10) from lower end of valve assembly.
- B. Remove pressure gauge (35, IPL Figure 2) from body and gage assembly (30) by removing two screws (40) and two lock washers (45). Remove and discard two backup rings (50), two preformed packings (55) and backup ring (60).
- C. Remove handle (10) as follows:
 - (1) Remove identification plate (5) from handle (10).
 - (2) Remove handle (10) by removing nut (15) and washer (20).
- D. Remove stem and poppet assembly (70) from valve body (210) as follows:
 - (1) Remove retaining ring (25) from shaft portion of stem and poppet assembly (70).
 - (2) Remove packing retainer (65) from valve body (210).
 - (3) Lift stem and poppet assembly (70), with attached parts, from valve body (210).
- E. Remove components from stem and poppet assembly (70) as follows:
 - (1) Remove and discard washer (75) from underside of seal retainer (95).
 - (2) While securely holding lower end (end nearest poppet) of stem and poppet assembly (70), unthread sleeve (80) from the threaded position of the stem.
 - (3) Remove guide (85), reciprocating seal (90) and seal retainer (95) from stem (70); discard reciprocating seal.
- F. Remove pressure cap assembly (100) from valve body (210) as follows:
 - (1) Detach lanyard assembly (105) from nipple (145) by removing screw (125), stud (130) and spacer washer (135).
 - (2) Detach lanyard assembly (105) from valve body (210) by removing screw (110), snap socket (115) and spacer (120).
 - (3) Unthread union nut (140) from OUTLET port of valve body (210); remove nipple (145).

3. Disassembly (Continued)

G. Remove filter assembly (150) from valve body (210) by turning filter assembly in a counterclockwise direction.

H. Remove inlet filter (190) from valve body (210) as follows:

(1) Remove locknut (180) from tube (185).

(2) Remove tube (185) from INLET of valve body (210).

(3) Remove filter (190) from recess in top of tube (185).

J. Remove seat (195), packing (205) and backup ring (200) from valve body (210); remove and discard backup ring and packing from seat.

K. Remove safety outlet nut (215) and insert (220) from valve body (210).

NOTE: DO NOT remove and disassemble burst disc assembly (155) from valve body (210) unless such removal is indicated by Testing and Fault Isolation.

L. Remove burst disc assembly (155) from valve body (210) as follows:

(1) Using driver, part number 2786-S52-1, remove retainer (170) from valve body (210).

(2) Remove and discard gasket (160) and disc (165) from retainer (170).

CLEANING

1. General

This section contains information regarding the equipment and procedures required for cleaning of the 804044 Series Cylinder and Valve Assemblies. Prior to cleaning, units shall be disassembled in accordance with the Disassembly section of this document.

2. Safety

WARNING: SUITABLE EYE PROTECTION SHALL BE WORN DURING CLEANING PROCEDURES TO PREVENT EYE INJURIES.

WHEN USING CLEANING SOLVENTS, AVOID PROLONGED OR REPEATED CONTACT WITH SKIN AND INHALATION OF TOXIC VAPORS.

CLEANING PROCEDURES SHALL ONLY BE PERFORMED IN AN APPROVED CLEANING CABINET, OR IN A WELL VENTILATED ROOM OR AREA.

DO NOT USE SOLVENTS NEAR OPEN FLAMES, OR IN AREAS WHERE HIGH TEMPERATURES PREVAIL.

DO NOT ALLOW OIL, GREASE, FLAMMABLE SOLVENTS, OR OTHER COMBUSTIBLE MATERIALS TO COME IN CONTACT WITH PARTS THAT WILL BE EXPOSED TO PRESSURIZED OXYGEN. DUST, LINT AND FINE METAL FILINGS ARE ALSO POTENTIAL COMBUSTIBLES THAT MIGHT IGNITE AND RESULT IN AN EXPLOSION WHEN EXPOSED TO PRESSURIZED OXYGEN.

3. Cleaning Materials

A list of cleaning materials is presented in Table 401. Equivalent materials may be substituted.

Table 401: Cleaning Materials

MATERIAL (Vendor Code)	DESCRIPTION	MANUFACTURER
Cleaner (N/A)	Nonionic detergent, Type I (MIL-D-16791)	Commercially Available
Degreasing Agent - Genesolv 2000 (V72658)	1,1-Dichloro-1-fluoroethane	Allied Signal Corp. Morristown, NJ 07962

4. Cleaning Procedures

Cleaning procedures are divided into three categories: cylinders, metallic components and non-metallic components. Cleaning procedures for each category are presented below.

5. Cylinders

Composite cylinders are used with the 804044 Series Cylinder and Valve Assemblies. Clean cylinder in accordance with the subsections of this paragraph. A typical cylinder cleaning setup is illustrated in Figure 401.

A. Clean exterior of composite cylinders as follows:

- (1) Plug neck of cylinder.
- (2) Clean exterior of cylinder using a soft-bristled brush and a fresh, hot (104°-140° F / 40°-60°C) one percent (1%) solution of non-ionized detergent and water (approximately one ounce of detergent per gallon of water).
- (3) Rinse exterior of cylinder with fresh water.
- (4) Blow dry exterior of cylinder with clean, dry, oil-free, heated air.

5. Cylinders - (Continued)

B. Clean interior of composite cylinders as follows:

- (1) Install cylinder in cleaning apparatus as shown in Figure 401.
- (2) Pump heated degreaser through perforated tube for 3-5 minutes to degrease interior of cylinder. Flow rate for degreaser shall be 6-8 feet (1.83-2.44m) of head per cleaning station. Allow excess degreaser to drain from cylinder.

NOTE: Length and diameter of perforated tube shall be determined by size of cylinder to be cleaned.

- (3) Pump clean, dry, oil-free, heated (212° F / 100°C) air (12.5 psig max.) through perforated tube for 2 minutes.
- (4)
- (5) Pump clean heated water (160° - 180°F / 71° - 82°C) through perforated tube for 3 minutes. Flow rate for the hot water rinse shall be at a minimum of 1.5 gallons (5.81 liters) per minute. Allow excess water to drain from cylinder.
- (6) Pump clean, dry, oil-free, heated (212° F / 100°C) air (12.5 psig max.) through perforated tube for 5 minutes. Interior of cylinder shall be completely dry.
- (7) Remove cylinder from cleaning setup and allow cylinder to self cool to room temperature.

C. Cylinder Cleanliness

- (1) Verify cylinder cleanliness in accordance with Federal Specification RR-C-901 with the exception that hydrocarbon contamination of cylinder shall not exceed 1.0 mg. per square foot of surface area washed.
- (2) Cylinder shall be odor-free.

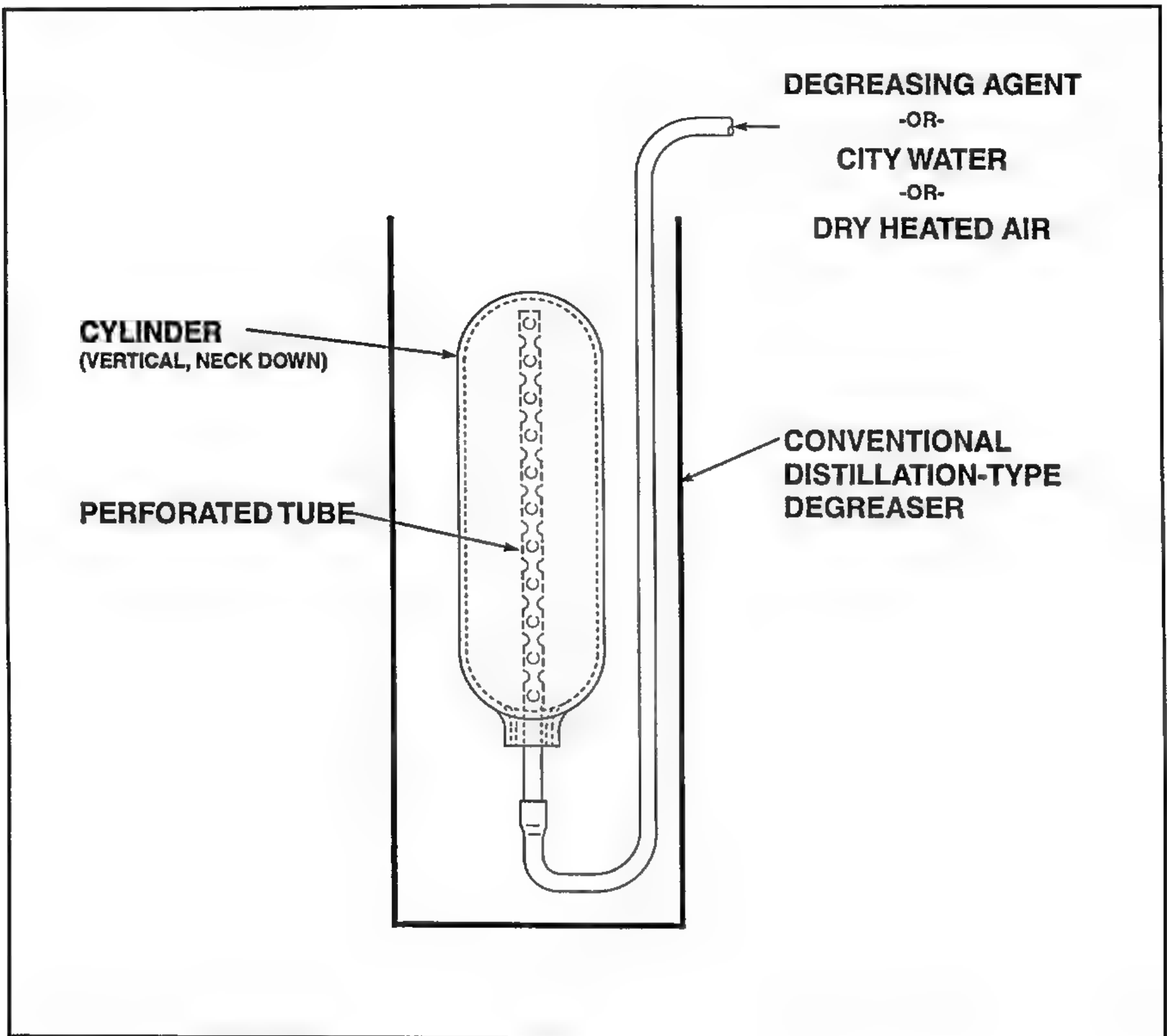


Figure 401 Cylinder Cleaning Setup

6. Metallic Components

Clean metallic components using a vapor degreasing method with degreaser agents specified in Table 401. Dry components with clean, dry, oil-free, heated air. Hydrocarbon contamination shall not exceed 1.0 mg. per square foot.

7. Non-Metallic Components

Clean non-metallic components using an ultrasonic detergent and water cleaning system. Parts shall be completely rinsed with clear water, and dried using clean, dry, oil-free, heated air. Hydrocarbon contamination shall not exceed 1.0 mg. per square foot.

CHECK

1. General

Following disassembly and cleaning procedures described in preceding sections of this document, all cylinder and valve assembly components shall be checked prior to use in reassembly. If doubt exists about serviceability of a part, replace it.

NOTE: Do not examine boss seal, o-rings, packings and nonmetallic seals. These items shall be replaced each time they are removed during disassembly.

2. Composite Cylinders

Composite cylinders shall be checked as indicated below:

NOTE: Refer to "Guidelines for Visual Inspection & Requalification of Fiber Reinforced High Pressure Cylinders" (CGA Pamphlet No. CGA C-6.2).

A. Determine latest date of hydrostatic testing of the cylinder. Hydrostatic inspection dates will either be stamped on the cylinder neck, and/or marked on a permanently affixed hydrostatic retest label located near the manufacturer's identification plate. Hydrostatically test cylinder, as required, in accordance with information presented in the Testing and Fault Isolation section of this document.

NOTE: Original hydrostatic test date for the cylinder is located on the manufacturer's identification plate. The manufacturer's identification plate also contains the manufacturer's exemption certificate number. Copies of the exemption certificate (which provides information on hydrostatic test and cylinder service life requirements) may be obtained from the United States Department of Transportation (DOT) at the following address: Superintendent of Documents, Attention: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954, USA or Fax: 202-512-2233.

B. Visually inspect exterior of cylinders for evidence of deformation, contamination or other signs of obvious damage.

C. Ensure that identification plate(s) and warning labels are legible and intact.

D. Inspect neck of cylinder for cracks, distortion and damage or contamination of threads.

E. Using an appropriate inspection light, visually inspect interior of cylinder for contamination and/or surface blemishes.

F. Ensure that interior of cylinder is odor-free.

3. Valve Components

Inspect valve components as indicated below:

NOTE: Stem & Poppet Assembly (70, IPL Figure 2) is an inseparable assembly. Damage to the stem threads or mating surface of the poppet shall require replacement of the entire Stem & Poppet Assembly.

A. Visually inspect all surfaces and threaded areas for evidence of damage, contamination, galling, burrs, excessive wear and corrosion.

NOTE: Excessive wear shall be defined as any obvious deformation, or deterioration of a part, which may render the unit inoperative or beyond operational limits.

B. Visually inspect all packing sealing surfaces for scratches or other obvious damage that may impair valve operation.

REPAIR

1. General

This section defines the scope of repair procedures that shall be performed with respect to the 804044 Series Cylinder and Valve Assemblies. Prior to repair, components shall have been evaluated in accordance with the Check section of this document.

2. Repair

Repair shall be limited to only those activities below:

- A. Cleaning
- B. Burr removal
- C. Thread chasing
- D. Replacement of cracked, bent, broken, scored, or otherwise defective components.
- E. Replacement of any boss seal, gasket, seal, packing, o-ring or filter, when removed during disassembly.
- F. Re-painting of composite cylinder exterior surface with green (color no. 14187 per United States Federal Standard FED-STD-595) paint.

ASSEMBLY

1. General

This section describes the equipment and procedures necessary for assembly of the 804044 Series Cylinder and Valve Assemblies.

2. Special Tools and Equipment

A list of special tools and/or equipment required for assembly of the 804044 Series Cylinder and Valve Assemblies is presented in Table 701. Entries in the "ITEM NO." column refer to the tool illustrations presented in Figure 901. Equivalent tools and/or equipment may be substituted for the listed items.

WARNING: TOOLS USED FOR MAINTENANCE/SERVICE OF OXYGEN RELATED EQUIPMENT SHALL BE CLEAN AND FREE OF CONTAMINANTS.

Table 701: Special Tools and/or Equipment

ITEM NO.	PART NUMBER	PART NAME	APPLICATION
1	804210-S52-1	Seal Installation Tool (Sleeve)	Used to install reciprocating seal (90, IPL Figure 2) on stem & poppet assembly (70)
2	804210-S52-2	Seal Installation Tool (Pusher)	
3	804212-S52-1	Trim Arbor	Used to prepare back-up ring (200, IPL Figure 2) for installation on seat (195)
4	804212-S52-2	Packing Ring Stylus	Used to install preformed packing (205, IPL Figure 2) on seat (195)
5	804212-S52-3	O-Ring Installation Sleeve	Used to install assembled seat components (195, 200 and 205, IPL Figure 2) in valve body (210)
6	804212-S52-4	Seat Insertion Tool	
Not Illustrated	2786-S52-1	Driver	Used to install burst disc assembly (155, IPL Figure 2) in valve body (210)

NOTE: All tools and equipment listed above are manufactured by (V53655) Scott Aviation, Lancaster, New York. Equivalent substitutes may be used.

3. Assembly Materials

A list of consumable materials, required for assembly of the 804044 Series Cylinder and Valve Assemblies, is provided in Table 702. Equivalent materials may be used, except for Oxygen Lubricant-General, and Lubricant-Oxygen Compatible (for threads).

Table 702: Consumable Assembly Materials

MATERIAL	DESCRIPTION	MANUFACTURER
Oxygen Lubricant -General	Krytox 240 AC (V18873)	E.I. DuPont DeNemours & Co. Inc. Wilmington, DE
Lubricant -Oxygen Compatible (for threads)	Christo-Lube MCG III (per MIL-G-27617) (V0JRD3)	Lubrication Technology, Inc. Jackson, OH
Lockwire	MS20995C20	Commercially Available
Sealing Compound (per MIL-S-46163)	Loctite, Grade 277 (V05972)	Loctite Corporation Newington, CT
	Loctite, Grade 290 (V05972)	
Temp-Alarm Paint	Torque Paint - Type 43 (V82682)	Big Three Industries, Inc. Tempil Division South Plainfield, NJ

4. Pre-Assembly Requirements

- A. All components, that are to be used in assembly of the 804044 Series Cylinder and Valve assemblies, shall have been cleaned and checked in accordance with preceding sections of this document.
- B. Unless otherwise noted, all packings, seals and o-rings shall be lubricated with a thin film of Krytox 240 AC Oxygen Lubricant prior to installation.
- C. Unless otherwise noted, use the Krytox 240AC oxygen lubricant in all assembly procedures that specify "oxygen lubricant".
- D. Prepare backup ring (200, IPL Figure 2) for use in body and tube assembly (175) as follows:
 - (1) Place a new backup ring (200) on the tapered diameter of trim arbor, part number 804212-S52-1.
 - (2) Using a sharp, thin knife blade, tilt the blade at a 45° angle to flat surfaces of the backup ring. See Figure 701.
 - (3) Maintain the tilt of the blade; with a single cut (no sawing motion) slice through the backup ring from the outside to the inside diameter of the ring.

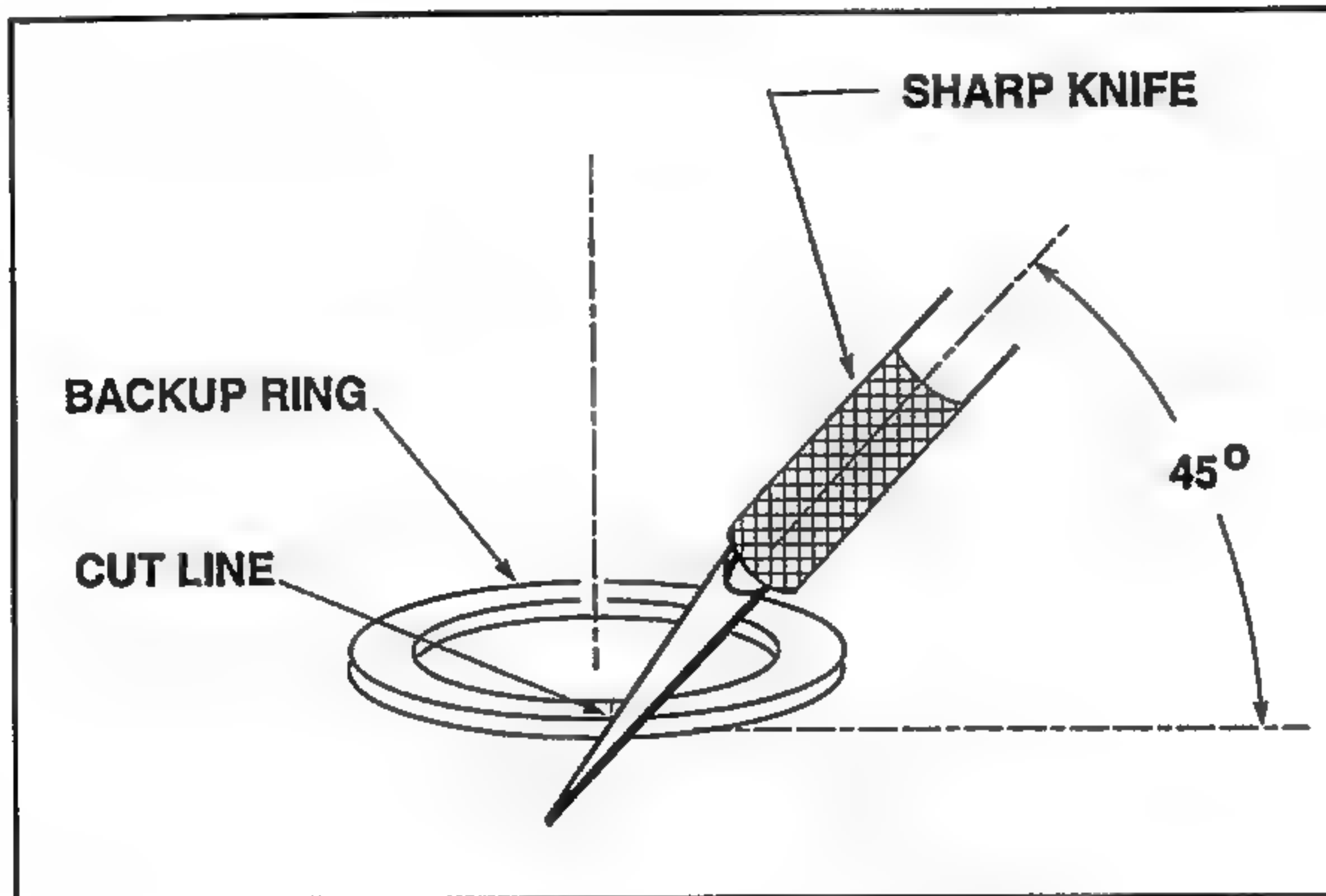


Figure 701: Backup Ring Preparation

5. Assemble Body and Tube Assembly (175, IPL Figure 2)

A. Assemble valve seat components (195, 200 and 205) as follows:

- (1) Install backup ring (200) in external groove of seat (195).

NOTE: Backup ring (200) shall have been prepared in accordance with paragraph 4.C of this Assembly Section prior to installation on seat (195).

- (2) Apply a thin film of oxygen lubricant to large diameter of packing ring stylus, part number 804212-S52-2. Slide preformed packing (205) onto stylus.
- (3) Insert pilot diameter of packing ring stylus into cavity on underside of seat (195); slide preformed packing (205) off of stylus and into the external groove of seat (195) that is occupied by backup ring (200). The packing shall reside in that portion of the external groove closest to the underside of seat (195).

B. With coarse side of filter (190, IPL Figure 2) facing outward, install filter in recess on top surface of tube (185).

C. Install seat components (195, 200 and 205) into valve body (210) as follows:

- (1) Orient small diameter end of seat components (195, 200 and 205) toward large diameter end of O-ring installation sleeve, part number 804212-S52-3.
- (2) CAREFULLY insert seat components into O-ring installation sleeve.
- (3) Holding the large diameter end of seat insertion tool, part number 804212-S52-4, use opposite end of the tool to push seat components (195, 200 and 205) toward small diameter end of the O-ring installation sleeve.

5. Assemble Body and Tube Assembly (175, IPL Figure 2) - (Continued)**C. Install seat components (195, 200 and 205) into valve body ...(Continued)**

- (4) Insert the small diameter end of the O-ring installation sleeve into the hole on the bottom surface of valve body (210).
- (5) Once again using the seat insertion tool push seat components (195, 200 and 205) out of the O-ring installation sleeve and into the valve body (210). Be sure that seat (195) is securely positioned against the shoulder inside the valve body.

NOTE: Valve Assembly (5, IPL Fig. 1) serial no.'s (found on valve body (210, IPL Fig. 2)) 101 thru 108 only must have a new tube (185), filter (190) and locknut (180) installed if valve body is not marked with the identifying letters "LN" on the same side of the valve assembly as the valve part number and serial number.

D. Install assembled tube and filter (185 and 190) into threaded hole on the bottom surface of valve body (210). Using the flats provided on the tube, torque the tube to 100 - 125 IN LBS (11.3 - 14.1 Nm).

E. Install locknut (180) on threads of tube (185); torque the locknut to 240 - 260 IN LBS (27.1 - 29.4 Nm).

F. If a new tube (185), filter (190) and locknut (180) were installed on serial no.'s 101 through 108 only, then metal-stamp or metal-etch the identifying letters "LN" on the valve body (210) for valve assembly (5, IPL Fig. 1) serial no.'s 101 thru 108. Identifying letters "LN" are to be located on the same side of the valve assembly as the valve part number and serial number.

6. Valve Assembly**A. Assemble stem and poppet components (70 thru 95, IPL Figure 2) as follows:**

- (1) Apply a thin film of oxygen lubricant to the smooth sealing surface of the stem and poppet assembly (70).

NOTE: The "sealing surface" of the poppet assembly (70) is the smooth surface of the stem that is located between the large diameter and the threaded portion of the stem.

- (2) Apply a thin film of oxygen lubricant to the inside diameter and all counterbored surfaces of seal retainer (95). With counterbore facing away from poppet end of stem and poppet assembly (70), slide seal retainer onto stem.
- (3) Orient reciprocating seal (90) with spring of seal visible; insert tapered end of the seal installation sleeve, part number 804210-S52-1, into inside diameter of the seal.

6. Valve Assembly - (Continued)**A. Assemble stem and poppet components - (Continued)**

- (4) Engage the slotted end (with O-ring) of seal installation pusher, part number 804210-S52-2, onto tapered end of the seal installation sleeve, part number 804210-S52-1. Using the seal installation pusher, push reciprocating seal (90, IPL Figure 2) onto large diameter of the seal installation sleeve.
 - (5) Slide cavity of seal installation sleeve, part number 804210-S52-1, onto threaded end of stem and poppet assembly (70). The face of the seal installation sleeve should contact the sealing surface of the stem and poppet assembly (70) on which seal retainer (95) was installed.
 - (6) Using the seal installation pusher, part number 804210-S52-2, push reciprocating seal (90) onto the sealing surface of the stem and poppet assembly (70).
 - (7) Orient guide (85) with small pilot diameter facing poppet end of stem and poppet assembly (70). Slide guide over threaded end of the stem and poppet assembly.
 - (8) Apply a liberal coat of oxygen compatible Christo-Lube MCG III lubricant onto the large diameter threads of the stem portion of the stem and poppet assembly (70).
 - (9) Orient sleeve (80) with groove on outside diameter of sleeve facing away from the poppet end of stem and poppet assembly (70). Thread sleeve onto the stem and poppet assembly until guide (85) pushes reciprocating seal (90) into recess of seal retainer (95); back-off sleeve one full turn after reciprocating seal is properly seated in seal retainer.
 - (10) Install washer (75) on pilot diameter on lower surface of seal retainer (95).
- B. With the poppet end of the assembled stem and poppet components (70 thru 95) entering valve body first, install the stem and poppet components into the top of body and tube assembly (175).**

C. Install packing retainer (65) on valve body (210) as follows:

- (1) Apply a small dab of Grade 277 Loctite sealing compound to the first thread of valve body (210)
- (2) Thread packing retainer (65) onto threads of valve body; using your hand, snug retainer onto valve body.
- (3) Rotate stem portion of stem and poppet assembly (70) in a counterclockwise direction to open valve. Poppet portion of the stem and poppet assembly will now be lifted from the seat (195).
- (4) Torque packing retainer (65) to 100 - 120 IN LBS (11.3 - 13.6 Nm).

6. Valve Assembly - (Continued)

D. Install burst disc assembly (155, IPL Figure 2) in valve body (210) as follows:

- (1) With identification number on face of disc (165) facing away from the assembler, install disc in recess of retainer (170).
- (2) Install gasket (160) in retainer (170); apply a thin film of oxygen lubricant to exposed surface of the gasket.
- (3) Using tool number 2786-S52-1, install burst disc assembly (155) in safety outlet port of valve body (210). Torque burst disc assembly to 350-375 IN LBS (39.6-42.4 Nm).
- (4) Install insert (220) in safety outlet nut (215); install nut in safety outlet port of valve body (210).

E. Install filter assembly (150) in outlet port of valve body (210). Torque filter assembly to 45-60 IN LBS (5.1-6.8 Nm).

F. Install pressure cap assembly (100) on outlet port of valve body (210) as follows:

- (1) Orient spherical end of nipple (145) toward body (210); install nipple in OUTLET port.
- (2) Install union nut (140) on external threads of outlet port on valve body (210); hand tighten nut.
- (3) Apply Grade 290 Loctite sealing compound to threads of screw (125).
- (4) Place larger loop of lanyard assembly (105) on small pilot diameter on face of spacer washer (135).
- (5) Position flat face of spacer washer (135) against end of union nut (140); align clearance hole of spacer washer with threaded hole in nipple (145).
- (6) Using the screw (125) that was prepared in step 3 above, and stud (130), secure spacer washer (135) to end of nipple (145).

NOTE: Verify that the loop of the lanyard assembly (105) rotates freely around the small pilot diameter on face of spacer washer (135).

G. Attach lanyard assembly to valve body as follows;

- (1) Apply Grade 290 Loctite sealing compound to threads of screw (110).
- (2) Align loop in end of lanyard assembly (105), spacer (120) and snap socket (115) as shown in IPL Figure 2.
- (3) Using the screw (110) that was prepared in step 1 above, secure the above arrangement of components (105, 120 and 115) to valve body (210).

6. Valve Assembly - (Continued)

H. Install pressure gage (35) on valve body (210) as follows:

- (1) Apply a thin film of oxygen lubricant to the external surface of the pressure gage (35) shaft.
- (2) Install two backup rings (50), two preformed packings (55) and one backup ring (60) on the shaft of the pressure gage (35).

NOTE: See IPL Figure 2 for proper installation sequence of above components on the shaft of the pressure gage (35).

- (3) Apply a thin film of oxygen lubricant to the outside diameters of the backup rings and packings (50, 55 and 60) that are mounted on the shaft of the pressure gage (35).
- (4) Insert shaft of the pressure gage (35) in gage mounting hole in valve body (210); secure gage to valve body with two each of screws (40) and lockwashers (45). Torque screws to 12 IN LBS (1.36 Nm).

J. Temporarily install handle (10) on valve assembly as follows:

- (1) Place washer (25) on protruding section of stem (70).
- (2) Position handle (10) on shaft of stem (70); secure handle to stem with washer (20) and nut (15).

NOTE: DO NOT install identification plate (5) at this time. Plate will be installed after assembly testing of the valve assembly is completed.

K. Test partially assembled valve assembly (1, IPL Figure 2) in accordance with Testing and Fault Isolation section of this document. Correct problems, as required, before proceeding with remainder of the assembly procedures.

L. Remove temporarily installed handle (10) from valve assembly (1) by removing nut (15), washer (20) and washer (25).

M. Lockwire packing retainer (65) to valve body (210) in accordance with military specification MS-33540.

N. Apply Grade 290 Loctite sealing compound to threads of stem (70); repeat assembly procedure 6.J above to reinstall handle (10) to the valve assembly.

P. Install identification plate (5) on handle (10).

Q. Apply dab of Temp Alarm paint to heads of two screws (40) that secure gauge (35) to valve body (210).

7. Cylinder & Valve Assembly

WARNING: PRIOR TO INSTALLING VALVE ASSEMBLY (5, IPL FIGURE 1) ON CYLINDER (15), ENSURE THAT VALVE ASSEMBLY HAS BEEN TESTED IN ACCORDANCE WITH THE TESTING AND FAULT ISOLATION SECTION OF THIS DOCUMENT.

CAUTION: DO NOT APPLY WRENCH FORCE TO CYLINDER NECK. INSTALL CYLINDER IN A SUITABLE PADDED HOLDING DEVICE IN SUCH A MANNER AS TO NOT DAMAGE THE FILAMENT OVERWRAP.

- A. Apply a thin film of oxygen lubricant to boss seal (10, IPL Figure 1); orient the boss seal with the large diameter of the seal facing valve body (210, IPL Figure 2); install new boss seal onto the threads of valve body (210).
- B. CAREFULLY thread valve assembly (5, IPL Figure 1) into neck of cylinder (15). Torque valve assembly into cylinder to 540 - 660 IN LBS / 45 - 55 FT LBS (61.0 - 74.6 Nm).
- C. Charge cylinder and valve assembly with aviation grade oxygen (per MIL-PRF-27210, Type I) at a rate not to exceed 300 psig (2.07 MPa) per minute until a pressure of 1850 +0/-50 PSIG (12.8 +0/-0.34 MPa) is attained at a temperature of 70° F (21° C). Verify pressure using a 0-2000 PSIG pressure gauge.
- D. Torque union nut (140, IPL Figure 2) of the pressure cap assembly (100) onto the outlet port of valve body (210) to a torque value of 350 - 400 IN LBS (39.6 - 45.2 Nm).
- E. Store cylinder for a minimum of 48-hours; at end of the 48-hours, check cylinder pressure using a 0-2000 PSIG. If leakage is apparent, perform step 7.F to determine extent of leakage.
- F. Perform leakage tests described in the Testing & Fault Isolation Section of this document and measure total assembly leakage. In no case shall the total assembly leakage exceed 5 cc/hour NTPD.

8. Storage Instructions

- A. Seal all valve assembly ports to prevent foreign matter from entering the valve. Store in sealed polyethylene or polyvinyl bag.
- B. DO NOT use preservative coating on the cylinder and/or valve assembly.
- C. Charge cylinders until a minimum pressure indication (150 psi / 1.03 MPa minimum) is observed on the pressure gauge.

FITS AND CLEARANCES

Torque values, critical to the assembly and operation of the 804044 Series Cylinder and Valve Assemblies, are listed in Table 801.

Table 801: Torque Values

IPL Reference		Nomenclature	Torque Values	
Fig. No.	Item No.		U.S.	Metric (Nm)
1	5	Valve Assembly	540 - 660 IN LBS	61.0 - 74.6
2	40	Screw	12 IN LBS	1.36
2	65	Packing Retainer	100 - 120 IN LBS	11.3 - 13.6
2	140	Union Nut	350 - 400 IN LB	39.5 - 45.2
2	150	Filter Assy	45 - 60 IN LBS	5.1 - 6.8
2	155	Burst Disc Assembly	350-375 IN LBS	39.5-42.4
2	180	Locknut	240-260 IN LBS	27.1 - 29.4
2	185	Tube	100 - 125 IN LBS	11.3 - 14.1

SPECIAL TOOLS, FIXTURES AND TEST EQUIPMENT

Special tools required for maintenance of the 804044 Series Cylinder and Valve Assemblies are presented in Table 901. Except as noted, Figure 901 illustrates the special tools listed in Tables 901. Special test equipment required for maintenance of the Cylinder and Valve Assemblies is presented in Table 902.

Table 901: Special Tools

ITEM NO.	PART NUMBER	PART NAME	APPLICATION
1	804210-S52-1	Seal Installation Tool (Sleeve)	Used to install reciprocating seal (90) on stem & poppet assembly (70)
2	804210-S52-2	Seal Installation Tool (Pusher)	
3	804212-S52-1	Trim Arbor	Used to prepare back-up ring (200) for installation on seat (195)
4	804212-S52-2	Packing Ring Stylus	Used to install preformed packing (205) on seat (195)
5	804212-S52-3	O-Ring Installation Sleeve	Used to install assembled seat components (195, 200 and 205) in valve body (210)
6	804212-S52-4	Seat Insertion Tool	
Not Illustrated	2786-S52-1	Driver	Used to install burst disc assembly (155) in valve body (210)
NOTE: All tools and test equipment listed above are manufactured by (V53655) Scott Aviation, Lancaster, New York. Equivalent substitutes may be used.			

Table 902: Special Test Equipment

NOMENCLATURE	PART NO. (Vendor Code)	MANUFACTURER
Flowmeter - (200-2000 LPM)	1110CM41CBGAA (V91556)	Brooks Instruments Statesboro, GA 30458
Flowmeter - (10-100 cc/min)	1355EC1HJAW1A (V91556)	
Pressure Gauge (0-2000 PSI)	132267 (1403 Series) (V61349)	Ametek (U.S. Gauge) Sellersville, PA 18960
Valve - Flow Control	B18VF8 (V12623)	Whitey Co. Highland Heights, OH 44143
NOTE: Equivalent test equipment may be substituted.		

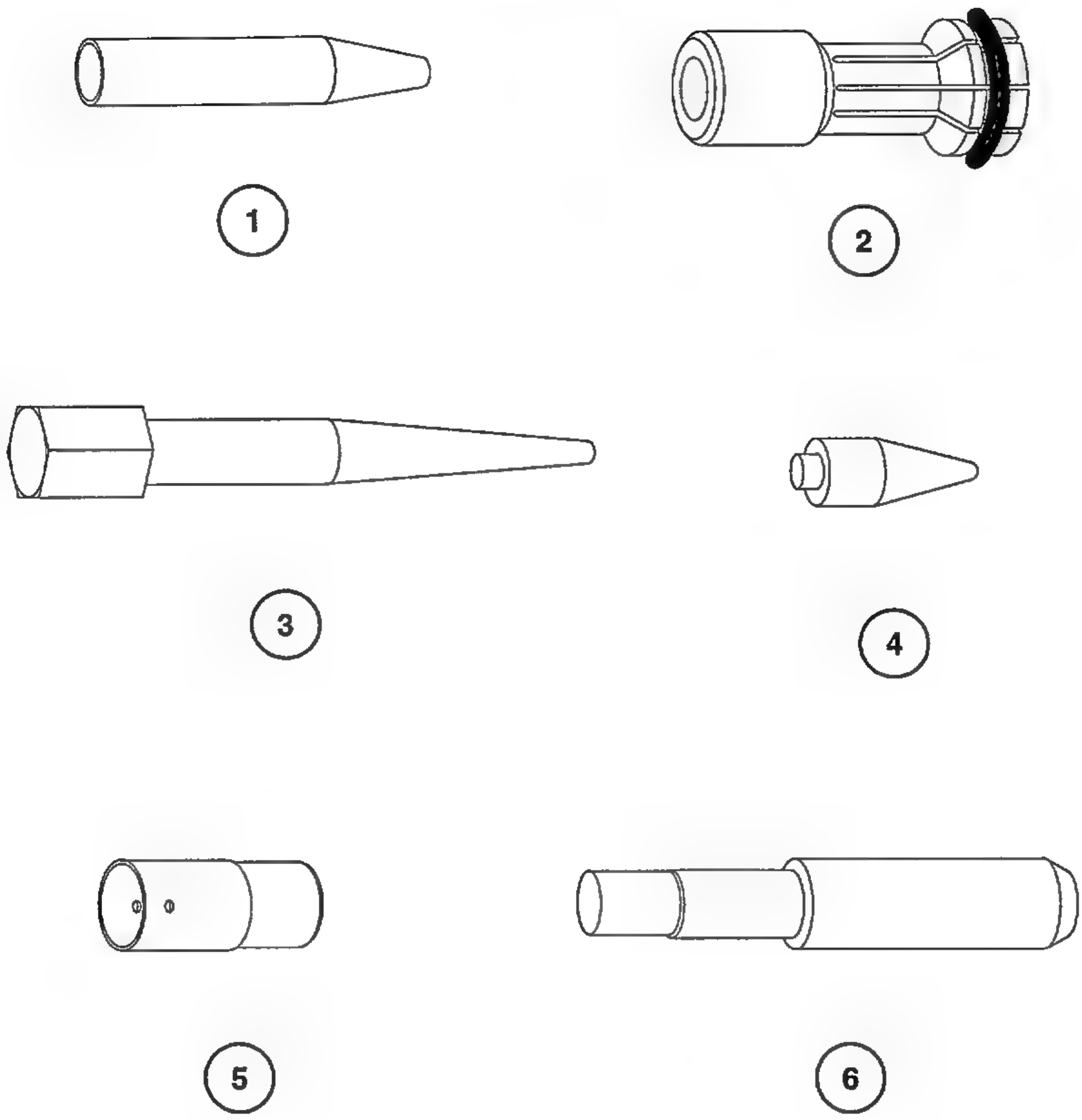


Figure 901: Special Tools and Test Equipment

ILLUSTRATED PARTS LIST

1. This Illustrated Parts List describes the parts for the 804044 Series Cylinder and Valve Assemblies.
 - A. The Illustrated Parts List consists of parts listings and completely indexed drawings. The particular oxygen regulator assemblies are followed immediately by their component parts, properly indented thereunder, to show their relationship to the assembly.
 - B. The quantities listed in the "UNITS PER ASSY" column are, in the case of assemblies, the total quantity used per cylinder assembly at the location indicated, while the component parts indented under the assemblies are the quantity used per assembly. The quantities specified, therefore, are not necessarily the total used per cylinder assembly.
 - C. The part numbers listed in the "PART NUMBER" column are Scott Aviation part numbers except standard parts, which are listed by "MS" and "AN" part numbers, and vendor items, which are listed by vendor part numbers.
 - D. A six place code, following the description of a part, indicates the manufacturer of that part. Standard parts and parts carried under Scott part numbers have no vendor's code. The following list contains the codes, and names and addresses of manufacturers supplying items or articles for the oxygen regulator assemblies. This listing includes the vendor codes presented in Tables 102, 401, 702, 901 and 902 and the parts lists contained in this section.

VENDOR CODES

<u>CODE</u>	<u>NAME AND ADDRESS</u>
V18034	Nupro Co. Willoughby, Ohio
V18873	E.I. DuPont DeNemours & Co., Inc. Wilmington, Delaware
V56878	SPS Technologies, Inc. Aerospace & Industrial Products Div. Jenkintown, Pennsylvania

VENDOR CODES - (Continued)

<u>CODE</u>	<u>NAME AND ADDRESS</u>
V58943	Structural Composite Industries Div. of Marsco Corp. Pomona, California
V61349	Ametek, Inc. US Gauge Div. Sellersville, Pennsylvania
V72658	Allied Signal Corporation Morristown, New Jersey
V76665	National Lock Washer Div. Charter Wire Co. Sommerville, New Jersey
V99742	Johnson and Johnson, Inc. Permacel Division New Brunswick, New Jersey

2. How to use this Illustrated Parts List

- A. If neither the part number nor the nomenclature is known, the part can be found by comparison with the exploded view illustration. When located on the illustration, the index number will refer to the line in the Illustrated Parts List with the part number and the nomenclature.

3. How to determine the applicable "EFFECT CODE"

- A. Parts used on only one part number oxygen valve assembly (see IPL Figure 1) are indicated by a letter symbol immediately following the description of a part in the "EFFECT CODE" column. An explanation of the letter symbols used is outlined below in Table 1001. A blank "EFFECT CODE" column following a part number indicates that the list part is common to all valve assemblies.

Table 1001: Effectivity Codes

<u>Part Number</u>	<u>"EFFECT CODE"</u>
804044-77	A
804044-15	B

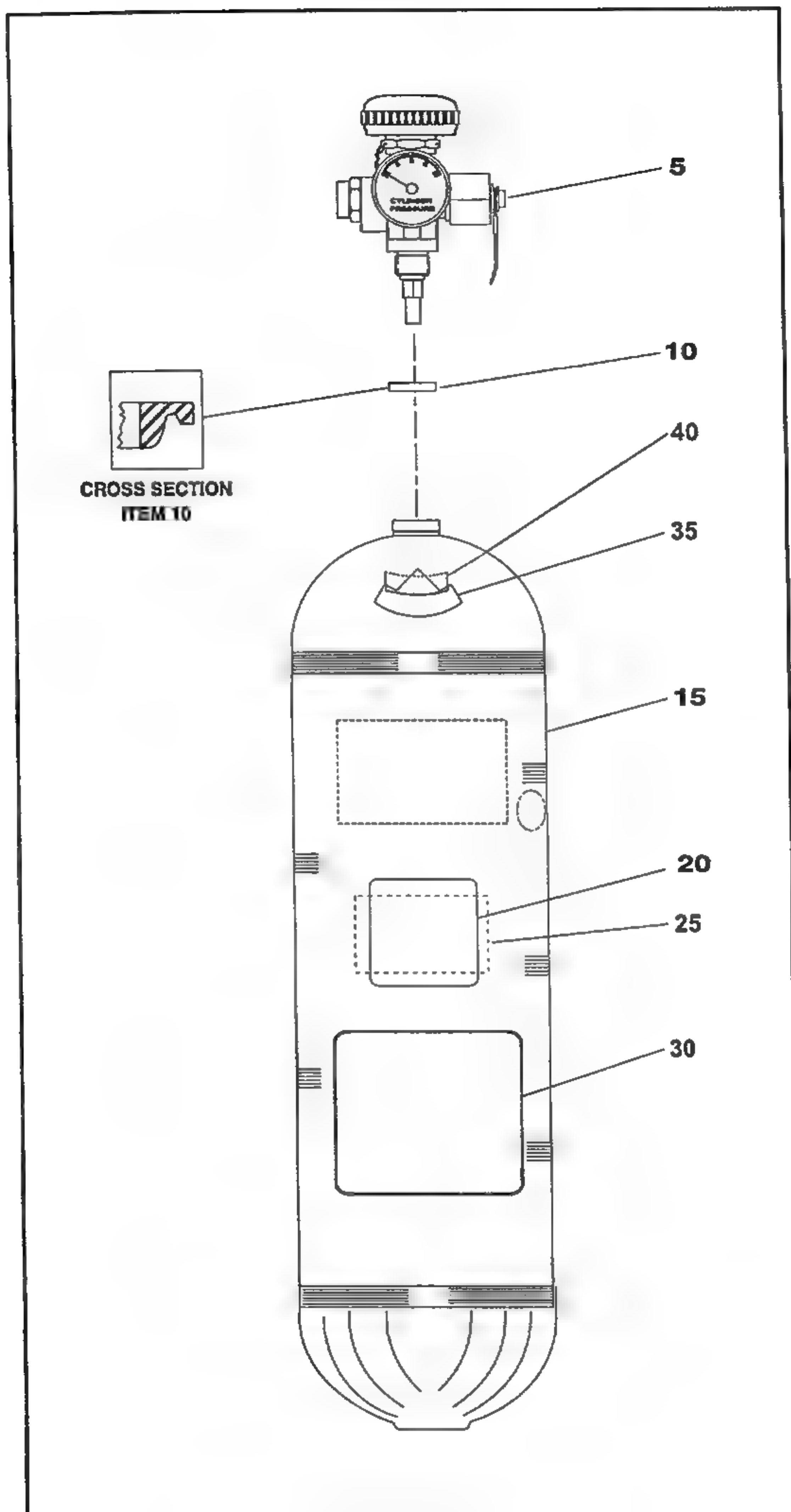
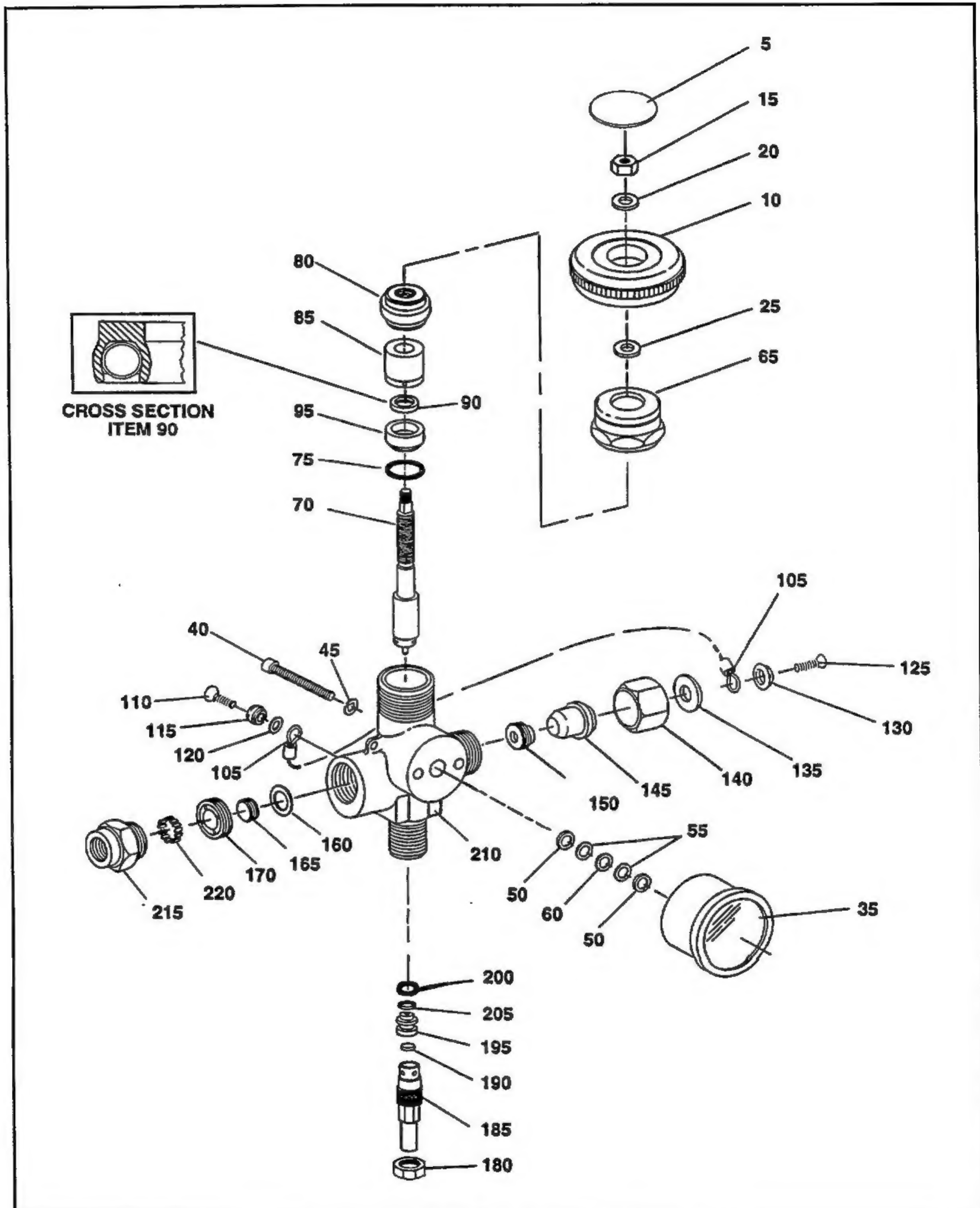


Figure 1
Cylinder and Valve Assembly

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	NOMENCLATURE 1234567	EFF. CODE	UNITS PER ASSY
1 -1	804044-77		CYLINDER & VALVE ASSY	A	RF
-1A	804044-15		CYLINDER & VALVE ASSY	B	RF
5	804216-01		• VALVE ASSEMBLY (SEE IPL FIGURE 2 FOR BREAKDOWN)		1
10	59776-01		• SEAL, BOSS		1
15	21507-03		• CYLINDER	A	1
-15A	21507-04		• CYLINDER	B	1
20	10008677		• PLATE, IDENTIFICATION		1
25	10005923		• DECAL		1
30	10008462		• LABEL, WARNING		1
35	10008459		• LABEL, WARNING		1
40	10003753		• LABEL		1

- ITEM NOT ILLUSTRATED



Valve Assembly
Figure 2

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	NOMENCLATURE 1234567	EFF. CODE	UNITS PER ASSY
2 - 1	804216-01		VALVE ASSEMBLY (SEE IPL FIG.1, ITEM 5 FOR NHA)		RF
5	22427-01		• PLATE, IDENTIFICATION		1
10	10003301		• HANDLE		1
			ATTACHING PARTS		
15	AN345C10		• NUT, PLAIN (SPN 18463-00)		1
20	AN960C10L		• WASHER, FLAT (SPN 33451-109) ***		1
25	MS16633-4021		• RING, RETAINING		1
-30	804211-01		• BODY & GAGE ASSEMBLY		1
35	21217-01		•• GAGE, PRESSURE		1
			ATTACHING PARTS		
40	18565-00		•• SCREW		2
45	18600-00		•• LOCKWASHER ***		2
50	22152-1		•• RING, BACK-UP		2
55	18070-00		•• PACKING, PREFORMED (ALTERNATE SPN 2800C6C)		2
60	22152-2		•• RING, BACK-UP		1
65	10008672		•• RETAINER, PACKING		1
70	804210-01		•• STEM & POPPET ASSEMBLY		1
75	10003578		•• WASHER		1
80	10008669		•• SLEEVE		1
85	10008670		•• GUIDE		1
90	10008727		•• SEAL, RECIPROCATING		1
95	10008627		•• RETAINER, SEAL		1
-100	801815-00		•• PRESSURE CAP ASSEMBLY		1
105	801823-00		••• LANYARD ASSEMBLY		1
110	MS24693C3		••• SCREW (SPN 33302-003)		1
115	AN227-7		••• SOCKET, SNAP (SPN 18946-00)		1
120	10004198		••• SPACER		1
125	MS24693C27		••• SCREW (SPN 33302-027)		1
130	13865-01		••• STUD		1
135	10004197		••• WASHER, SPACER		1
140	6121-01		••• NUT, UNION		1
145	10003316		••• NIPPLE		1

- ITEM NOT ILLUSTRATED

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	NOMENCLATURE 1234567	EFF. CODE	UNITS PER ASSY
2-					
150	801420-00		•• FILTER ASSEMBLY - OUTLET		1
-155	804213-01		•• BURST DISC ASSEMBLY		1
160	6555-00		••• GASKET		1
165	10003742		••• DISC		1
170	2786-00		••• RETAINER		1
-175	804212-01		•• BODY & TUBE ASSEMBLY		1
180	10009131		••• LOCKNUT (SEE NOTE 1)		1
185	10008674		••• TUBE (SEE NOTE 1)		1
190	8820-00		••• FILTER - INLET (SEE NOTE 1)		1
195	10008675		••• SEAT		1
200	10008673		••• RING, BACKUP		1
205	50740-03		••• PACKING, PREFORMED		1
210	10008676		••• BODY, VALVE		1
215	10002536		• NUT - SAFETY OUTLET		1
220	6572		• INSERT		1
NOTE 1: Valve assembly, serial no.'s 101 - 108, did not originally have locknut (180) installed. A valve assembly (serial no.'s 101 - 108) that is not marked with the identifying letters "LN" near the valve assembly serial no. must have the tube (185) and filter (190) replaced and a locknut added. Valve assembly (serial no.'s 101 - 108) must be metal-stamped or metal-etched "LN" on the valve body (210) on the same side of the valve assembly as the valve part number and serial number when the tube and filter are replaced and a locknut added.					

- ITEM NOT ILLUSTRATED